# Agenda Item 9a, February 19, 2008 Attachment 3



**Investment Office** 

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June 18, 2007

### **AGENDA ITEM 8a**

TO: MEMBERS OF THE INVESTMENT COMMITTEE

I. SUBJECT: Revision of Global Equity Sub Asset Class Allocation

Ranges Policy

II. PROGRAM: Global Equity

**III. RECOMMENDATION:** Approve staff's recommendation to expand the Global

Equity Sub Asset Class Allocation Ranges to:

1. 5%, +/-3%, for the Risk Managed Absolute Return

Strategies Program

and

2. 5%, +/-3% for the Corporate Governance

Investment Program.

## IV. ANALYSIS:

## **Executive Summary**

Staff recommends the Investment Committee approve an increase in the allocation range for both the Risk Managed Absolute Return Strategies (RMARS) and Corporate Governance Investment Program. This is supported by the good performance achieved by both strategies since inception and the need for additional capital to go to these alpha generating strategies to enhance Total Fund performance. Attachment 1 is the current Statement of Investment Policy for Global Equity Sub-Asset Class Allocation Ranges. Attachment 2 is the opinion letter provided by Wilshire Associates supporting staff's recommendation.

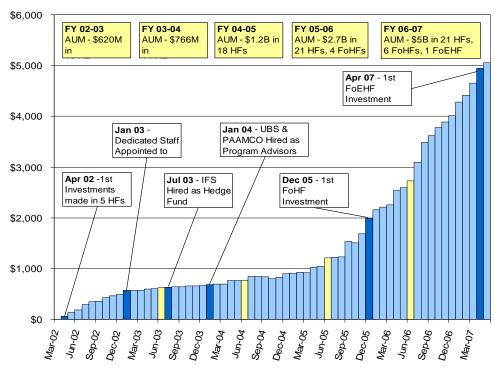
# **Background**

# Risk Managed Absolute Return Strategies (RMARS)

# Growth of the Program

The Risk Managed Absolute Return Strategies (RMARS) program made its initial investment of \$50 million to five absolute return funds on April 1, 2002. Since that time, the RMARS program has grown to almost \$5 billion as shown in Chart 1 and is invested with 21 absolute return funds and 7 funds of absolute return funds. The capital invested in the 21 absolute return funds (approximately \$4 billion) is allocated across eight distinct absolute return strategies. The capital invested in the seven funds of absolute return funds (approximately \$1 billion) is allocated across three distinct platforms – Asian region, European region, and emerging absolute return funds.

Chart 1: Growth of RMARS Program & Assets



Dollars in Millions

#### Performance

The RMARS program has produced consistent out-performance compared to its benchmark as shown in Chart 2.

14% 12.7% 11.6% 11.0% 12% 10.2% 9.5% 9.1% 10% 8.19 Percent Return 6% 4% 2% 1Yr ■ RMARS Portfolio □ RMARS Benchmark (1 Yr T-Bills+5%)

Chart 2: Performance of RMARS Program and Benchmark

State Street Bank methodology is CFA Institute compliant. All figures are net of all fees for periods ending March 31, 2007. Inception Date: April 2002

#### Resources

As the RMARS program has grown, so has the level of talent and expertise within the Program. Since April 2002, staff has gained a significant amount of experience in building and managing an absolute return strategies program. Since the Program's inception, staff has worked with some of the most respected advisors in the absolute return fund industry and gained experience in conducting due diligence on hedge funds. The resources devoted to the Program include Pacific Alternative Asset Management, UBS O'Conner, International Fund Services (IFS), as well as internal and external legal staff. Over the last four years, staff has constructed a technology platform which integrates accounting, risk analytics and portfolio construction. The technology platform, combined with the internal and external capabilities, ensures the Program can be scaled in size while ensuring a high level of risk management vigilance.

## **Investment Process**

The Risk Managed Absolute Return Strategies Advisory Board and staff have built a rigorous investment decision making process for selecting and allocating

capital to absolute return funds and fund-of-absolute-return funds. This process will continue to be strictly followed. The process is comprehensive and requires both staff and at least one of its advisors to conduct their own independent due diligence. The findings associated with the due diligence are discussed between staff and, most often, both of the advisors. If the prospective fund meets the approval of CalPERS, staff makes a formal recommendation to the RMARS Advisory Board. Each advisor also provides a written confirmation/opinion on staff's recommendation. Any action associated with allocating or redeeming capital requires a minimum of three votes from the four members that comprise the RMARS Advisory Board.

# Risk Management

A crucial element of the Program's success is its continuously evolving, multifaceted approach to risk management. Currently, CalPERS is in the enviable position of obtaining position level transparency from approximately 90% of its direct investments. Risk management is carried out on these four levels:

- A multi-factor risk management platform created by Ho Ho, Quantitative Portfolio Manager, and maintained by fellow members of staff, serves as a primary tool for determining performance attribution and, more crucially, evaluating expected return and risk profiles for individual funds and the RMARS Program portfolio.
- 2. The Program's absolute return fund administrator, IFS, provides a growing suite of risk monitoring tools which increasingly utilize the security-specific information provided by more than 90% of the Program's direct investments.
- CalPERS' enterprise-wide investment risk assessment systems are also valuable in determining the extent to which the Program serves its dual purposes of enhancing CalPERS' return profile while dampening overall investment volatility.
- 4. The Program's advisors both at the Program level (UBS and PAAMCO) and at the FoHF level (the three Asian, three European FoHF managers, and soon to be three FoHF emerging absolute return fund managers) each bring their own unique approaches to risk management, both quantitative and qualitative, to the Program.

The Program's risk platforms expand and develop as the Program itself grows; this in turn provides additional assurance that absolute return investments are being undertaken in a prudent manner.

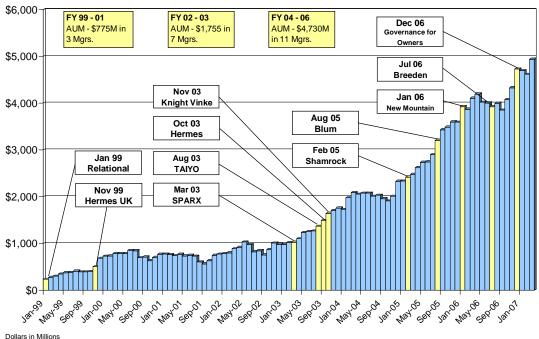
# **Corporate Governance Investment Program**

# Growth of the Program

The Corporate Governance Investment Program (Investment Program) began in 1999 through a \$200 million investment with Relational Investors, LLC. Since then, the Investment Program has expanded to eleven external corporate governance investment managers and an internally managed co-investment portfolio. The total asset value of the Investment Program is \$5.1 billion with \$4.2 billion in externally managed corporate governance funds and \$860 million in the internally managed co-investment portfolio. Chart 3 shows the growth in the market value of assets for the Investment Program since inception.

At the February 2007 meeting of the Investment Committee, the Committee gave staff the delegation to expand the scope of corporate governance investments to include emerging market corporate governance funds. Staff is currently conducting due diligence on two emerging market corporate governance funds and expects to enter due diligence on a third emerging market corporate governance fund within the next two months.

Chart 3: Corporate Governance Asset Growth



#### Performance

The Investment Program has performed well versus its benchmark since inception. Chart 4 shows the historical performance for the Investment Program.

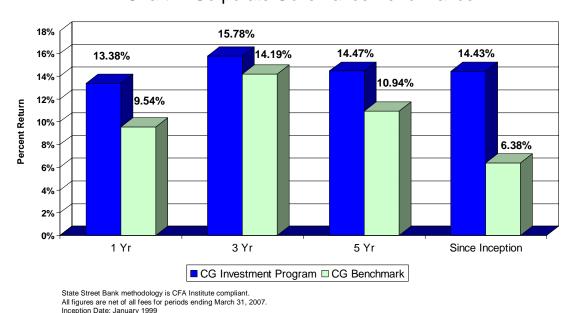


Chart 4: Corporate Governance Performance

#### Resources

The external corporate governance investment managers contribute to the Total Fund by generating positive alpha, providing good co-investment recommendations and serving as a resource to staff on a wide range of global corporate governance issues. Since making its first investment with Relational Investors LLC, staff has gained valuable experience providing oversight of externally managed corporate governance funds that execute corporate governance strategies in the US, Europe and Japan. In addition, staff has obtained experience and demonstrated the ability to work with the external corporate governance investment managers to successfully manage an internal corporate governance co-investment portfolio.

In September 2005 CalPERS hired a Senior Portfolio Manager to lead the Corporate Governance Unit, with particular emphasis being placed on expanding the Investment Program. Given the good performance and increase in capital committed to the Investment Program since September 2005, a portfolio manager is being recruited to CalPERS to assume responsibility initially for the performance and growth of the internally managed co-investment portfolio.

In 2006, staff retained International Fund Services (IFS) to install a technology platform that provides accounting and reconciliation functions for the Corporate Governance Investment Program. In addition, the IFS technology platform serves as an interface between State Street Bank and the external corporate governance investment managers to insure the accuracy of financial and investment performance reporting for the Investment Program. The IFS technology platform provides scalability to the Investment Program as staff pursues new corporate governance funds and co-investments in both developed and emerging markets.

CalPERS also uses its proxy vote to support and advance corporate governance improvements at portfolio companies in the external corporate governance investment managers' portfolios and the internally managed co-investment portfolio. In addition, Wilshire Associates supports the Investment Program by performing due diligence on prospective external corporate governance investment managers and providing opinion letters on those firms both staff and Wilshire Associates agree to recommend to the Investment Committee. Wilshire Associates also provides an opinion letter to the CalPERS Investment Committee for new corporate governance co-investment partners. At a minimum, Wilshire Associates conducts quarterly due diligence conference calls with the external corporate governance investment managers and provides a written report to staff summarizing the key points of the conference call.

## **Investment Process**

### External Corporate Governance Investment Managers

Corporate Governance staff utilizes a four step process to evaluate and select external corporate governance investment managers. First, the prospective investment manager completes and submits to staff its detailed response to the Corporate Governance Investment Manager Questionnaire. Staff scores the investment manager's response to the questionnaire, with a minimum of 70 points out of a maximum of 100 points required for the investment manager to move to the second phase. Phase two involves an on-site due diligence meeting conducted by staff at the investment manager's office. If the on-site due diligence is successful, the manager will enter phase three which requires the completion of a questionnaire provided by Wilshire Associates and an additional on-site due diligence meeting conducted by Wilshire Associates. Wilshire Associates will provide staff with its due diligence report and recommendation regarding the hiring of the external corporate governance manager. Assuming a successful phase three, phase four involves the negotiation of terms and conditions by the CalPERS Legal Office and external counsel with the prospective external corporate governance investment manager. Once terms and conditions are successfully negotiated, the investment manager is funded.

## Co-Investments

Staff reviews co-investment recommendations submitted by external corporate governance investment managers that have managed corporate governance portfolios for CalPERS for a minimum of one year with performance that exceeds the manager's performance benchmark. Staff conducts an extensive review of the research material provided by the external corporate governance investment manager for the co-investment recommendation. Particular attention is paid to the corporate governance strategy to unlock value embedded in the company. Staff will also research and analyze the company's historical financial statements and proxy statements, third-party industry and company research reports, and company reports produced by the proxy voting advisory firms. In addition, staff will review CalPERS' own proxy voting record at the company. Upon completion of this analysis, if deemed appropriate the co-investment recommendation is submitted to the Senior Investment Officer of Global Equity for approval.

# Risk Management

The CalPERS Risk Management unit monitors and assesses risk at both the Investment Program and manager levels. The Risk Management unit is able to do this with security specific information provided by IFS for each corporate governance investment manager. At the Investment Program level, staff is able to look at the level of total risk, the source of risk, and each individual manager's contribution to the total risk for the Investment Program. The Risk Management unit also provides corporate governance staff the tools to look at the composition and source of risk for each external corporate governance investment manager. Finally, the Risk Management unit is able to assist the corporate governance staff with looking at the impact that a new corporate governance fund investment or co-investment will have on the risk for the total Investment Program. The tools provided by the Risk Management Unit allow staff to continue to actively monitor the risk for the Investment Program, even as the Investment Program expands in terms of committed capital and future investments in both developed and emerging market corporate governance funds.

# **Increase in Allocation Ranges**

Staff recommends amending the policy document in Attachment 1 to increase the current allocation to both the RMARS and Corporate Governance Investment Program sub asset classes be increased, as a percentage of the market value for the Global Equity portfolio, to 5 percent, plus or minus 3 percent. This compares to the current allocation range of 3 percent, plus or minus 2 percent. This recommendation is based on (1) the amount of capital currently committed to both sub-asset classes relative to current limits, (2) the goal of having both strategies make an even greater contribution to the Total Fund; and (3) the

likelihood that new investment opportunities will be identified that will require additional capital that exceeds staff's current delegation.

This increase in allocation would mean The Broad Range for Alternatives in Global Equity would go from 0-16% to 5-21% with an anticipated target in the policy of 13% +/- 5%.

# **Risk Analysis**

**Objective:** To estimate the effect of increasing the allocation to the RMARS and Corporate Governance programs within the Global Equity asset class on the risk to CalPERS Global Equity asset class and Total Fund.

**Summary:** The proposed maximum allowed allocation of both programs (8% of Global Equity each) has the most significant impact, causing a reduction in total fund total risk, as well as a reduction in the total fund active risk. Conversely, when measured against the global equity benchmark, active risk would increase significantly under this scenario. Increasing the allocation to the RMARS program has the greatest potential impact to reducing total fund volatility and active risk compared to the total fund benchmark.

**Methodology:** The analysis was performed assuming six different scenarios:

- Baseline of current holdings plus the assumptions of increasing the current allocation to the RMARS program from 3% to 5% and 8%.
- The third and fourth scenarios assume the baseline and an increase the Global Equity allocation to the corporate governance program from 3% to 5% and 8%.
- The final scenarios assume an increased allocation to both programs of 5% and 8%.

The funding for the increased allocations is assumed to come fully from the Global Equity passive portfolios. It is assumed that 60% of the allocation shift would come from the domestic equity passive program and 40% from the international equity program. To model the impact of the corporate governance program change it is assumed that all of the existing corporate governance accounts increase proportionately to adjust to the new allocation.

Full disclosure of the RMARS program's security-level holdings is not available. Therefore, a returns-based analysis is used to model the proposed increased exposure to absolute return funds. MSCI Barra has recently created an absolute return fund risk model using a series of absolute return fund returns and absolute return fund factors which capture strategies characteristic of certain absolute return fund styles. This model is used to analyze absolute return fund investments in conjunction with other holdings in other asset classes. The

absolute return fund return information was obtained from MSCI Barra based on a large peer group sample.

The increased allocations to corporate governance and absolute return funds are evaluated within the context of the actual CalPERS holdings as of March 31, 2007 and run through the Barra TotalRisk model and CalPERS Risk Measurement System.

**Results:** The values presented in the table below represent the forecasted annual standard deviation of returns (%) over the next twelve months. The baseline scenario represents a 3% allocation within global equity to both corporate governance and absolute return funds, and the baseline also includes a half percent overweight to international equity. Both programs reduce total fund total risk and active risk because they have return characteristics that differ from the remainder of the fund. The RMARS program also reduces total risk of the Global Equity asset class. Active risk of the asset class increases, however, because both programs incorporate concentrated positions relative to the Global Equity benchmark.

Risk Management Unit's Projected Risk Analysis

Scenario	Total Fund		Global Equity	
	Total Risk	Active	Total	Active Risk
		Risk	Risk	
Baseline (Corp Gov and	7.4	0.9	10.6	0.7
RMARS both 3%)				
Increase RMARS to 5%	7.3	0.9	10.5	0.9
Increase RMARS to 8%	7.2	0.9	10.3	1.2
Increase Corp Gov to 5%	7.4	0.9	10.6	0.7
Increase Corp Gov to 8%	7.4	0.9	10.6	0.8
_				
Increase both to 5%	7.3	0.9	10.5	0.9
Increase both to 8%	7.2	0.9	10.2	1.2

## V. STRATEGIC PLAN:

This item is consistent with the Strategic Plan: Goal VIII: Manage the risk and volatility of assets and liabilities to ensure sufficient funds are available, first, to pay benefits, and second, to minimize and stabilize contributions.

# VI. RESULTS/COSTS:

Implementation of this agenda item will require additional staff for both the
Corporate Governance unit and the Risk Managed Absolute Return Strategies.

Kurt Silberstein Portfolio Manager Risk Managed Absolute Return Strategies

Dennis Johnson Senior Portfolio Manager Corporate Governance

Christianna Wood Senior Investment Officer Global Equity

Russell Read

Chief Investment Officer

# CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM STATEMENT OF INVESTMENT POLICY

# FOR GLOBAL EQUITY SUB-ASSET CLASS ALLOCATION RANGES

# **August 15, 2005**

This Policy is effective immediately upon adoption.

#### I. PURPOSE

This document sets forth the investment policy, guidelines, and procedures ("the Policy") for determining the allocation of funds to the various sub-asset classes of Global Equity. The Policy allows for sufficient flexibility to capture investment opportunities as they may occur, yet provides reasonable parameters to ensure prudence and care while managing the Program. Additionally, use of this Policy provides assurance that there is sufficient flexibility in controlling investment risks and returns associated with this segment of the market.

# II. STRATEGIC OBJECTIVE

The Program shall be managed to accomplish the following:

- A. Enhance the System's total return;
- B. <u>Hedge</u> against active (pre-retirement) liabilities;
- Provide diversification to the System's overall investment program;
   and
- D. Consider solely the interest of the System's participants and their beneficiaries in accordance with California State Law.

#### III. RESPONSIBILITIES AND DELEGATIONS

A. The **System's Investment Committee** ("the Investment Committee") is responsible for approving and amending the Policy. The Investment Committee delegates the responsibility for administering the Program to the System's Investment Staff.

- B. The **System's Investment Staff's** ("the Staff") duties include, but are not limited to, the following:
  - 1. Developing and recommending the Policy to the Investment Committee;
  - 2. Developing and maintaining a procedures manual, subject to periodic reviews and updates, outlining Staff operational procedures used in implementing this Policy;
  - 3. Implementing and adhering to the Policy;
  - 4. Reporting immediately all violations of the Policy to the Chief Investment Officer and at the next monthly report to the Investment Committee with explanations.
- C. **The General Pension Consultant** is responsible for monitoring, evaluating, and reporting to the Investment Committee, at least quarterly, about the performance of Global Equity.

## IV. BENCHMARK

The <u>benchmark</u> for the U.S. equity portion of Global Equity is the <u>Custom Wilshire 2500</u>. The benchmark for the international portion of Global Equity is the Custom FTSE All-World ex-U.S.

## V. SUB-ASSET CLASS ALLOCATIONS

The categories and ranges for global sub-asset classes shall be as follows:

Global Equity Sub-Asset Classes						
	Current Allocation	Broad Ranges	Anticipated Target			
Passive	71%	50% - 100%	70% <u>+</u> 15%			
Enhanced & Active	23%	0% - 40%	20% <u>+</u> 10%			
Alternatives (Corp Gov.; MDP; RMARS)	6%	0% - 16%	8% <u>+</u> 4%			

- A. There are three broad categories: <a href="Passive">Passive</a>, Active/Enhanced and Alternatives. The Alternatives category includes the Manager Development Program (MDP), Corporate Governance Managers, and Risk Managed Absolute Return Strategies (RMARS).
- B. The Broad Ranges permit staff to strive for the greatest ability to maximize the return per unit of <u>risk</u> for Global Equity. The Anticipated Target Ranges are the most likely outcomes. The rationale behind the ranges is as follows:
  - 1. Passive: The index funds are the fallback alternative when there are insufficient opportunities to add value. This allocation is broad because it is impossible to forecast when good opportunities may be available. The Anticipated Target Range of 55% to 85% may be exceeded only upon approval by the Chief Investment Officer.
  - Active/Enhanced: This encompasses both enhanced indexation and active managers. The availability of managers varies widely depending on the assignments and whether it is domestic or international. The Anticipated Target Range of 10% to 30% may be exceeded only upon approval of the Chief Investment Officer.
  - 3. Alternatives: The range for Alternatives is set at 0% to 16%. Since this encompasses Corporate Governance, MDP, and RMARS, there are a range of opportunities and possibilities that would be subject to availability, success and <u>liquidity</u>. The Anticipated Ranges for the three areas of Alternatives shall be as follows:

Global Equity Alternatives Allocation					
	Current Allocation	Anticipated Target			
Corp Gov	3%	3% <u>+</u> 2%			
MDP	2%	3% <u>+</u> 2%			
RMARS	1%	3% <u>+</u> 2%			

The Anticipated Target Range to individual categories of Alternatives, set at 1% to 3%, may be exceeded only upon approval by the Chief Investment Officer.

- 4. The ranges are meant to allow staff the flexibility to fund current Board approved programs to the extent that there are competitive opportunities consistent with CalPERS' RFP and contracting process. Staff will be making decisions based on a wide range of factors such as, but not limited to, the maturity, size and performance persistence of the manager, the prudence of the strategy, and the ability to successfully implement the transition. The primary factor will be a systematic capital allocation process that is reviewed semi-annually by staff.
- C. The split between international and domestic securities is determined by the CalPERS Investment Committee. Each of the proposed categories has both domestic and international vehicles. Staff will uphold the international /domestic allocation over the entirety of Global Equity and opportunistically add to each within stated policy guidelines

## VI. GLOSSARY OF TERMS

Definitions for key words used in this policy are located in the Equity Glossary of Terms which is included in the System's Master Glossary of Terms.

Approved by the Policy Subcommittee: June 10, 2005 Adopted by the Investment Committee: August 15, 2005

# Asset Class Glossary: Equities Policy: Global Equity Sub-Asset Class Allocation Ranges

### **Benchmark**

A set of securities with associated weights that provides a passive representation of a manager's investment process. The benchmark return is usually used to measure a manager's performance results.

## **CalPERS Custom Wilshire 2500 Index**

The Wilshire 2500 Index, excluding Real Estate Investment Trusts (REITs) and tobacco stocks, and with dividends reinvested. The Wilshire 2500 comprises the top 2500 securities of the Dow Jones Wilshire 5000 Index, excluding REITs and tobacco stocks, based on market capitalization, and is reconstituted annually. The Dow Jones Wilshire 5000 is an index that measures the performance of all U.S.-headquartered equity securities with readily available price data.

## **Enhanced Indexation**

An equity-based strategy or synthetic strategy where managers are expected to add consistent alpha above the passive index by controlling tracking error at a level that is below traditional active management. For example, for U.S. large capitalization core equity, the expectation is a return of 1.00% per annum above the benchmark, net of fees, with annual tracking of 2.00%-2.50%.

# Hedge (Hedging)

A strategy used to offset investment risk. A perfect hedge is one eliminating the possibility of future gain or loss.

## Liquidity

The ability to quickly convert a particular investment into cash at a low transaction cost.

### Manager

A professional responsible for managing the securities portfolio of an individual or institutional investor. In return for a fee, the money manager has the fiduciary responsibility to choose and manage investments prudently for their clients. In the System's case, an internal manager is a portfolio manager on the staff, while an external manager is an outside money management firm.

#### **Passive Investment**

Investing in a manner that attempts to replicate the characteristics and performance of a market index. In theory, passive investing/management assures investment performance is neither worse nor better than the market as a whole. In practice, actual results differ from the results reported for the index due to transactions costs and tracking error.

## Risk

A measurable probability of losing or not gaining value. Risk is differentiated from uncertainty, which is not measurable. Risk in this context is also referred to as "standard deviation", which is a statistical measure of the degree to which an individual value in a probability distribution tends to vary from the mean of the distribution.

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Andrew Junkin CFA, CIMA, CAIA Managing Director

May 30, 2007

Dr. Russell Read Chief Investment Officer California Public Employees' Retirement System 400 Q Street Sacramento, CA 95814

Re: Revision of Global Equity Sub-Asset Class Ranges

Dear Russell,

You requested Wilshire's opinion with respect to Staff's recommendation to increase the minimum, maximum and target allocations to both the RMARS Program and the Corporate Governance Investments Program. Wilshire supports these increases and recommends that the Investment Committee approve the increases.

## **Proposed Changes**

Staff is seeking to expand the acceptable range for both the RMARS Program and the Corporate Governance Investments Program from a target of 3% of Global Equity for each program to a target of 5% of Global Equity for each program. In addition, Staff is proposing that the range be changed from 1-5% (3% +/-2%) for each program to 2-8% (5% +/- 3%). The increased target allocation will allow both Programs to have a greater impact on the total Global Equity portfolio and the increased ranges will allow Staff additional flexibility in managing each program. As noted below, both Programs have been very successful parts of CalPERS' Global Equity portfolio.

## **Background**

The RMARS Program has just over five years of history, with an inception date in April of 2002. The program has grown to nearly \$5 billion as of March 31, 2007 and includes eight different investment strategies. Wilshire conducted an evaluation of the RMARS Program in July of 2006 and assigned a score of 257 points out of 300 possible, or 86%. Over the past five years, the program has earned 9.3% annualized, fully 2% ahead of its benchmark. The information ratio of the Program over this time period was 0.3. Given the turbulent nature of the markets, the RMARS Program's performance has been excellent. The program was designed to offer absolute returns that were not highly correlated with the rest of CalPERS' marketable securities programs. Since inception,

Revision of Global Equity Sub-Asset Class Ranges May 30, 2007 Page 2

the RMARS program has had a correlation of 0.5 versus the US stock market, -0.2 versus the US bond market and 0.6 versus the international stock market. In addition, the program has provided positive returns in 67% of the months since inception.

As we noted in our evaluation, the RMARS Program makes excellent use of its two outside advisors (PAAMCO and UBS) and the third-party data collector and risk aggregator (IFS). Staff is charged with sector allocation and manager selection, but PAAMCO and UBS provide strategic direction and manager research. Staff also makes use of internal and external risk management tools to examine risk from a variety of angles, including quantitative attribution analysis and holdings-level analysis.

The Corporate Governance Investments Program history stretches back to 1999 with CalPERS' first investment with Relational Investors. The program has grown to just under \$5 billion as of March 31 and now includes eleven different investments along with three co-investment relationships. The Program is geographically diversified with exposure to US, European and Asian markets. In addition, the Investment Committee has granted authority to Staff to seek out Corporate Governance Investments in emerging markets. Over the past five years, the Program has earned 14.6% annualized, 3.7% ahead of its benchmark. The information ratio of the Program over this time period was 0.4.

# **Risk Analysis and Implementation Issues**

The Risk Management Unit has prepared an analysis of the effect on the total fund and on the Global Equity portfolio of each of these changes. Individually, increasing the target allocation to RMARS (holding Corporate Governance constant) from 3% to 5% decreases the total fund's total risk slightly, from 7.39% to 7.32%. This represents a Value at Risk (VAR) decrease of \$271 million. At the maximum limit for the program, the total fund's total risk falls to 7.19%, which is a reduction in VAR of \$775 million. However, the increase in the target allocation represents a potential increase in the Global Equity portfolio's tracking error (as noted earlier, the RMARS program is not highly correlated with global equity markets). The tracking error of the Global Equity portfolio is expected to increase from 0.7% to 0.852%. Therefore, the Performance at Risk (PAR) of the Global Equity portfolio would increase from 1.16% to 1.41%. At the upper limit, the PAR rises to 1.93%.

Taking the Corporate Governance allocation increase individually (holding RMARS constant), the increase in target causes a decrease in the total fund's total risk from 7.39 to 7.38, representing a \$39 million VAR decrease. At the upper limit, the total fund's total risk falls 7.36, representing a decrease in VAR of \$116 million. The PAR increases from 1.16% to 1.20% and further rises to 1.31% at the upper limit of the proposal.

Combined, the increased target allocations would reduce the total fund's total risk level from 7.39% to 7.31%, decreasing further to 7.17% when both programs are modeled at their upper limits. This represents a decrease in VAR of \$310 million at the target

Revision of Global Equity Sub-Asset Class Ranges May 30, 2007 Page 3

allocations and \$853 million at the upper limits. The PAR rises from 1.16% at the current target to 1.45% at the proposed target and 2.05% at the upper limits.

In essence, while overall risk is reduced due to the increased use of absolute value strategies through RMARS, the Global Equity portfolio will be less like its benchmark, causing an increase in PAR. Wilshire views the decrease in VAR as unambiguously positive, since there is no corresponding reduction in expected returns. The increase in PAR is not inherently good or bad. A higher PAR represents a greater amount of potential value added as well as the potential for greater amounts of underperformance. Using PAR as a risk budgeting tool would suggest "spending" PAR on programs that have the potential to add significant amounts of value. For this reason, Wilshire believes that the RMARS Program and the Corporate Governance Investments Program are good place to increase PAR for the Global Equity portfolio.

From an implementation standpoint, RMARS will be able to allocate a higher dollar amount to any particular fund as the size of the Program grows. This is a result of the structure of the RMARS delegated authority, which allows Staff to allocate up to 8% of the market value of the program to a single fund (10% with CIO approval). Thus, at its current size the RMARS team could allocate roughly \$400 million to a single fund. At the proposed target size, the RMARS team could allocate roughly \$600 million to a single fund. At its maximum size, the RMARS team could allocate \$960 million to a single fund. Obviously, CalPERS could become a much larger part of the assets of a single fund, which brings about certain concentration risks. The RMARS team is well aware of these risks and they are evaluated as part of the ongoing investment process.

The Corporate Governance Investment Program's delegated authority is based on the assets of the entire Global Equity portfolio, rather than the size of the program. Currently, up to 0.25% of the market value of Global Equity can be allocated to a new investment with a Corporate Governance partner, roughly equivalent to \$375 million. Follow-on investments are subject to the same size limit, which doubles the effective limit that Staff can allocate to a single partner. Increasing the size of the Corporate Governance Investment Program is likely to mean adding new partners, which will cause Staff to seek out and conduct due diligence on new funds. Wilshire feels that Staff has adequate capacity to manage the existing Program and to search for new managers.

In short, increasing the size of each program could mean additional concentration with existing managers or adding new managers as the size of the program grows. We feel Staff has adequate resources to manage the growth of each program and recognize that the growth to the new targets will likely take place at a measured pace.

## Conclusion

Wilshire recommends that the Investment Committee authorize the increases in the target allocations and ranges for both the RMARS Program and the Corporate Governance Investments Program. Both Programs have outperformed their respective benchmarks.

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The overall risk of the total fund will slightly decrease as a result of the proposed changes, although the tracking error of the Global Equity composite is expected to rise. There are practical considerations when increasing the size of each of these portfolios, but Wilshire feels that Staff has the resources and capacity to manage the growth of each program.

Should you require anything further or have any questions, please do not hesitate to contact us.

Best regards,

Chun Jin-